

USSN: 10/024,625

Conf. No. 3998

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A suture welding system for fixedly attaching a first length of suture to a second length of suture at a suture welding site, comprising:

an electrosurgical energy source configured to generate radio frequency waves;

first and second lengths of suture; and

a suture welding device, having:

a working end;

a suture contacting element located on the working end and having the first and second lengths of suture disposed thereon;

a first electrode electrically coupled to the electrosurgical energy source and disposed on the suture contacting element for providing radio frequency energy to the first and second lengths of suture; and

a second electrode electrically coupled to the electrosurgical energy source and disposable proximate to the suture welding site for providing a return electrical energy path to the electrosurgical energy source;

wherein provision of radio frequency energy by the first electrode to the first and second lengths of suture welds the first and second lengths of suture into a fixed attachment.

2. (Canceled)

3. (Original) The system according to claim 1 wherein the suture contacting element comprises two opposing faces having a variable gap therebetween, each face having an electrode disposed thereon.

4. (Original) The system according to claim 3 wherein the suture welding device is configured to be selectively adjustable between an open position and a closed position, wherein the first and second lengths of suture may be placed within the variable gap in the open position and wherein the lengths of suture are constrained within the variable gap in the closed position.

USSN: 10/024,625

Conf. No. 3998

5. (Original) The system according to claim 1 wherein the first and second lengths of suture are made of material selected from the group consisting of polydioxanone, prolene, and polymer plastics.

6. (Original) The system according to claim 1 wherein the first and second lengths of suture are made of polydioxanone.

7. (Previously Presented) The system according to claim 1 wherein a weldable material is provided between at least one electrode and at least one length of suture, the weldable material adapted to weld the first length of suture thread to the second length of suture thread upon application of radio frequency energy through the at least one electrode.

8. (Currently Amended) ~~The suture welding device of claim 1. A suture welding system for fixedly attaching a first length of suture to a second length of suture at a suture welding site, comprising:~~

~~an electrosurgical energy source; and~~

~~a suture welding device, having:~~

~~a working end;~~

~~a suture contacting element disposed on the working end;~~

~~a first electrode electrically coupled to the electrosurgical energy source and disposed on the suture contacting element for providing electrical energy to the first and second lengths of suture; and~~

~~a second electrode electrically coupled to the electrosurgical energy source and disposable proximate to the suture welding site for providing a return electrical energy path to the electrosurgical energy source;~~

wherein the suture welding device includes a piston slidingly disposed on the suture welding device so as to be translatable in a longitudinal direction to move the first and second lengths of suture into contact with at least one electrode; and

~~wherein provision of electrical energy by the first electrode to the first and second lengths of suture welds the first and second lengths of suture into a fixed attachment.~~

USSN: 10/024,625

Conf. No. 3998

9-19. (Canceled)

20. (Previously Presented) A method for welding a first length of suture to a second length of suture to create a fixed attachment therebetween, comprising:

- (a) providing an electrosurgical energy source;
- (b) providing a suture welding device, having:
 - a working end;
 - a suture contacting element disposed on the working end, the suture contacting element having two opposing faces having a variable gap therebetween, each face having an electrode disposed thereon;
 - a first electrode electrically coupled to the electrosurgical energy source and disposed on the suture contacting element for providing electrical energy to the first and second lengths of suture; and
 - a second electrode electrically coupled to the electrosurgical energy source and disposable proximate to the suture welding site for providing a return electrical energy path to the electrosurgical energy source;
- (c) placing a first length of suture and a second length of suture into contact with the suture contacting element; and
- (d) providing energy from the electrosurgical energy source through the first electrode to the first and second lengths of suture to weld the first length of suture to the second length of suture to create a fixed attachment therebetween.

21. (Previously Presented) The method of claim 20 wherein the electrosurgical energy source generates radio frequency waves.

22. (Canceled)

23. (Previously Presented) The method of claim 22 wherein the suture welding device is configured to be selectively adjustable between an open position and a closed position, wherein the first and second lengths of suture may be placed within the variable gap in the open position and wherein the lengths of suture are constrained within the variable gap in the closed position.

USSN: 10/024,625

Conf. No. 3998

24. (Previously Presented) The method of claim 23 wherein the suture contacting element forces the first and second lengths of suture into close physical contact with each other when the suture welding device is placed in the closed position.

25. (Previously Presented) The method of claim 20 wherein the suture contacting element has at least one pod configured to prevent the first and second sutures from sliding off of the suture contacting element.

26. (Previously Presented) The method of claim 20 wherein the first and second lengths of suture are made from polydioxanone.

27. (Previously Presented) The system of claim 4 wherein the suture contacting element is configured to force the first and second length of suture into close physical contact when the suture welding device is placed in the closed position.

28. (Previously Presented) The system of claim 1 wherein the suture contacting element has at least one pod configured to prevent the first and second sutures from sliding off of the suture contacting element.

29. (Previously Presented) A suture welding system for fixedly attaching a first length of suture to a second length of suture at a suture welding site, comprising:

- an electrosurgical energy source; and

- a suture welding device, having:

- a working end;

- a suture contacting element disposed on the working end, the suture contacting element having at least one pod configured to prevent the first and second sutures from sliding off of the suture contacting element;

- a first electrode electrically coupled to the electrosurgical energy source and disposed on the suture contacting element for providing electrical energy to the first and second lengths of suture; and

USSN: 10/024,625

Conf. No. 3998

a second electrode electrically coupled to the electrosurgical energy source and disposable proximate to the suture welding site for providing a return electrical energy path to the electrosurgical energy source;

wherein provision of electrical energy by the first electrode to the first and second lengths of suture welds the first and second lengths of suture into a fixed attachment.

30. (Previously Presented) The system of claim 29 wherein the electrosurgical energy source generates radio frequency waves.

31. (Previously Presented) The system of claim 29 wherein the suture contacting element comprises two opposing faces having a variable gap therebetween, each face having an electrode disposed thereon.

32. (Previously Presented) The system of claim 31 wherein the suture welding device is configured to be selectively adjustable between an open position and a closed position, wherein the first and second lengths of suture may be placed within the variable gap in the open position and wherein the lengths of suture are constrained within the variable gap in the closed position.

33. (Previously Presented) The system of claim 32 wherein the suture contacting element is configured to force the first and second length of suture into close physical contact when the suture welding device is placed in the closed position.

34. (Previously Presented) The system of claim 1 wherein the first and second lengths of suture are made of polydioxanone.